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PATENT & TRADEMARK OFFICE

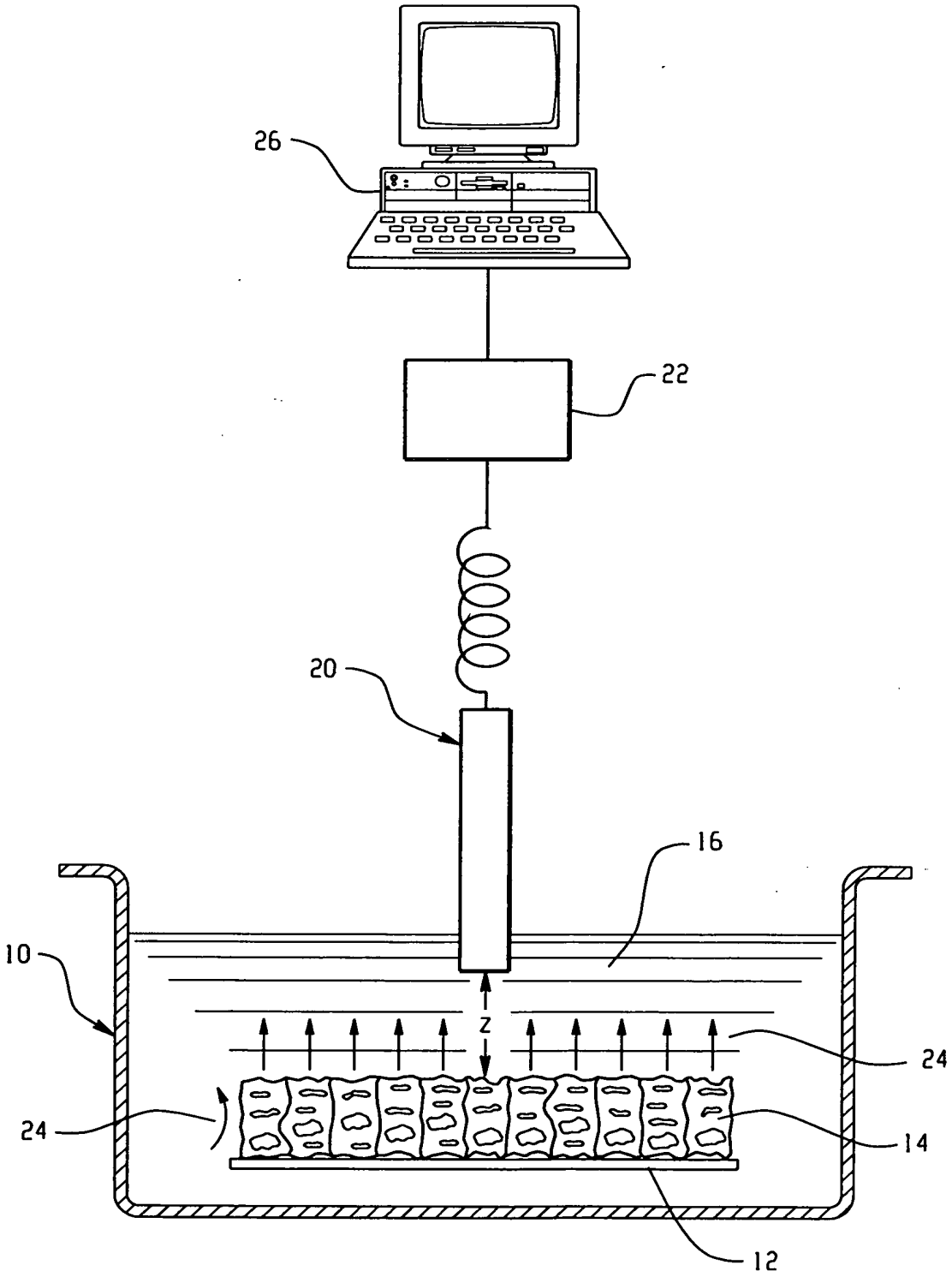

Fig. 1

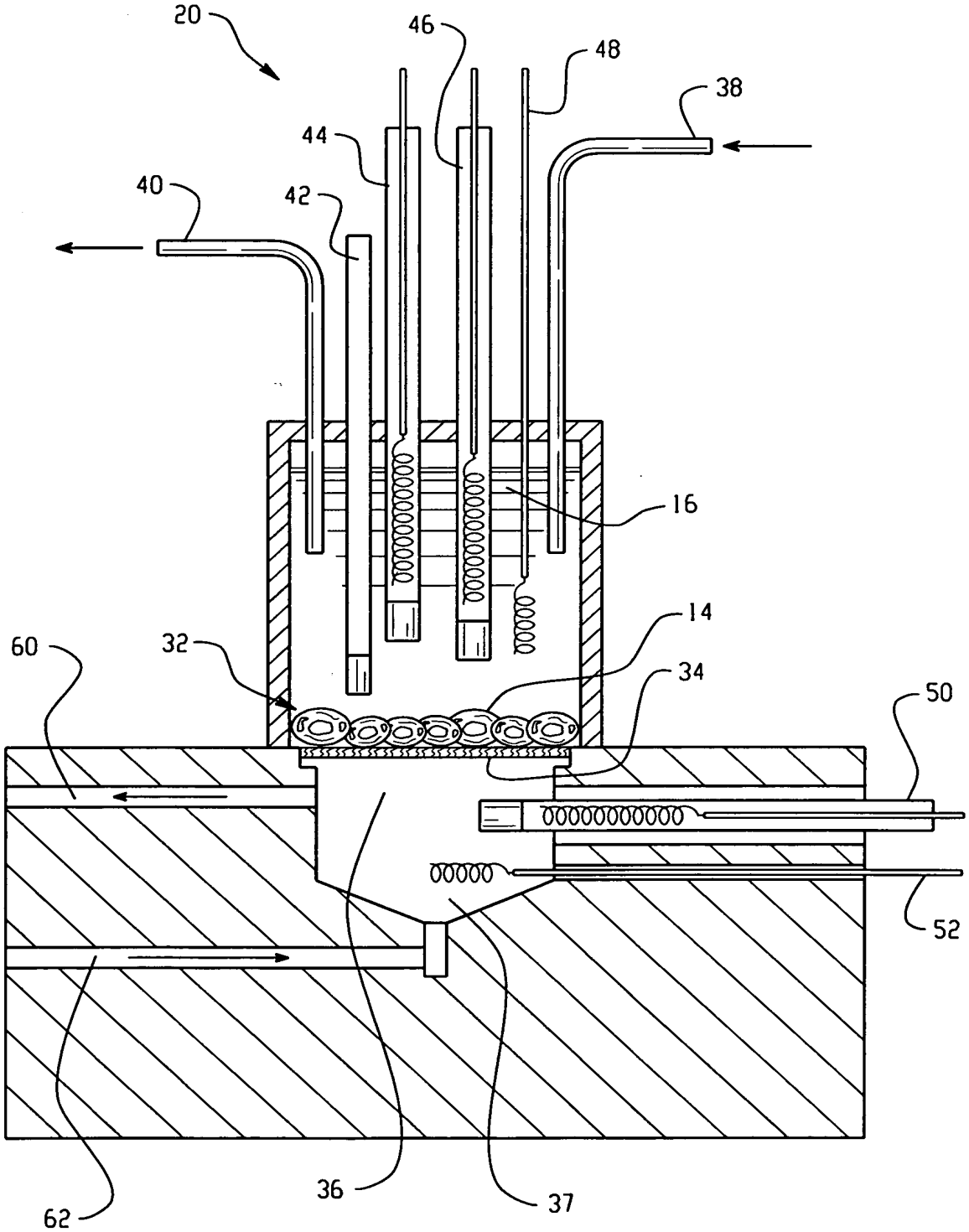

Fig. 2

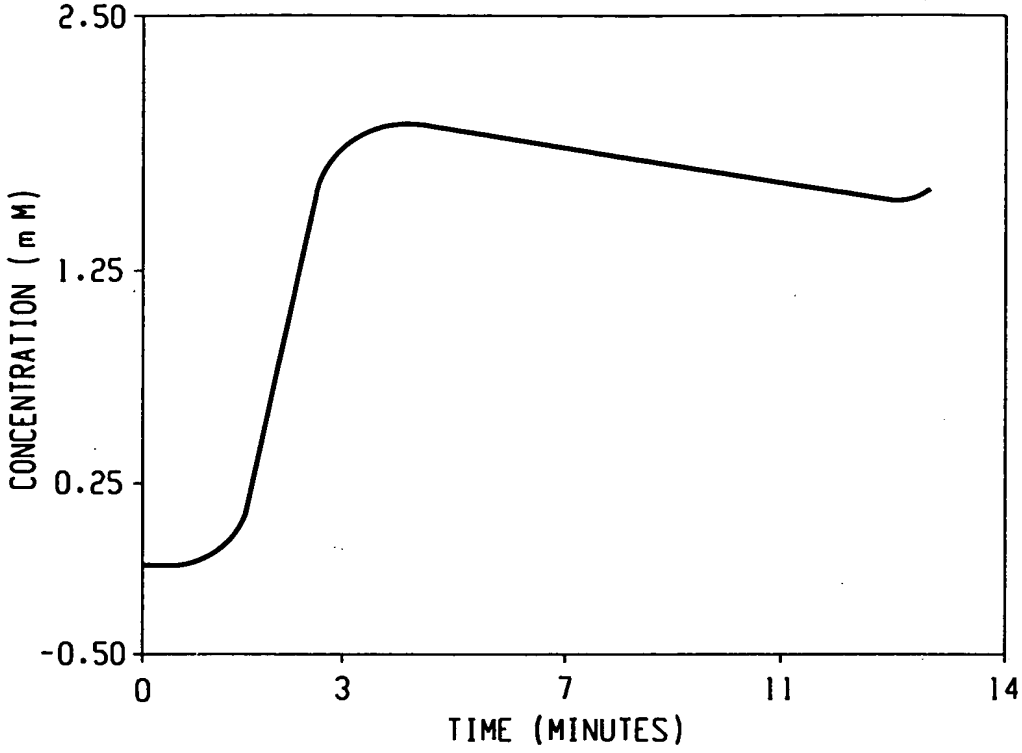
2.50
1.25
0.25
-0.50
CONCENTRATION (mM)
0
3
7
11
14
TIME (MINUTES)

Fig. 3

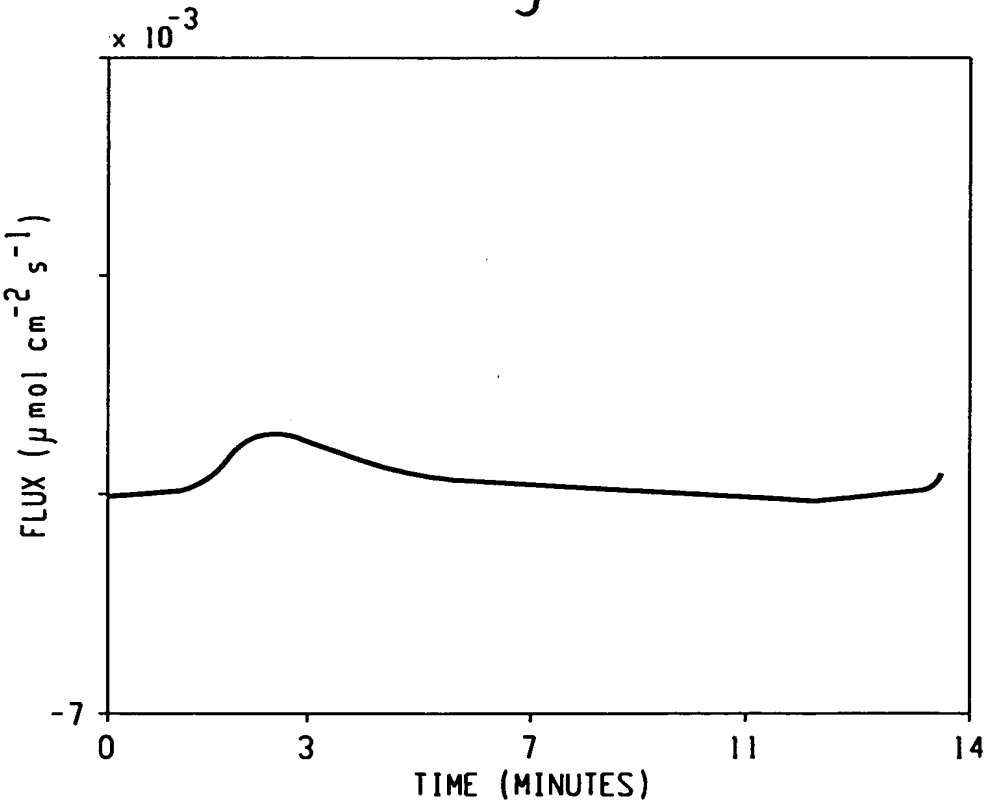
x 10^-3
FLUX (μmol cm^-2 s^-1)
-7
0
3
7
11
14
TIME (MINUTES)

Fig. 4

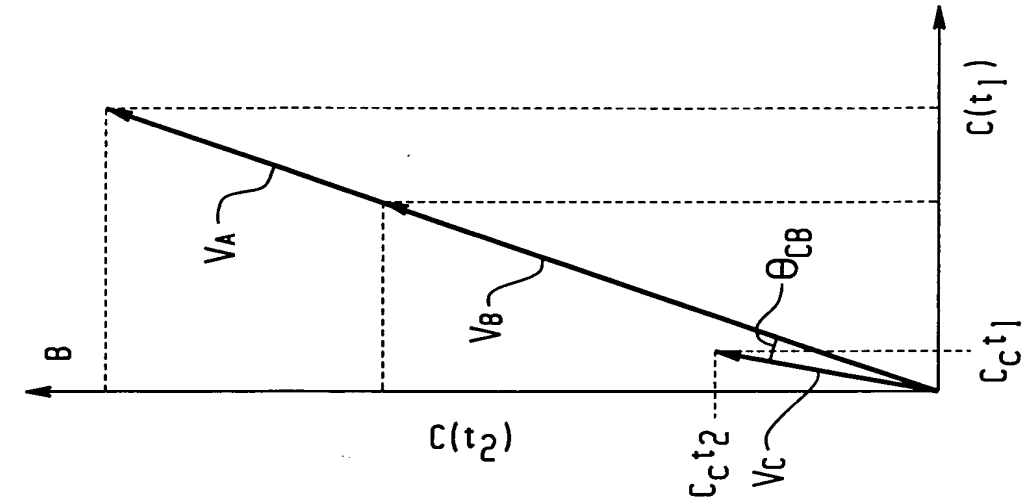
B
V_A
V_B
θ_{CB}
$C(t_2)$
$C(t_1)$
$C_c t_1$
$C_c t_2$
V_C

Fig. 6

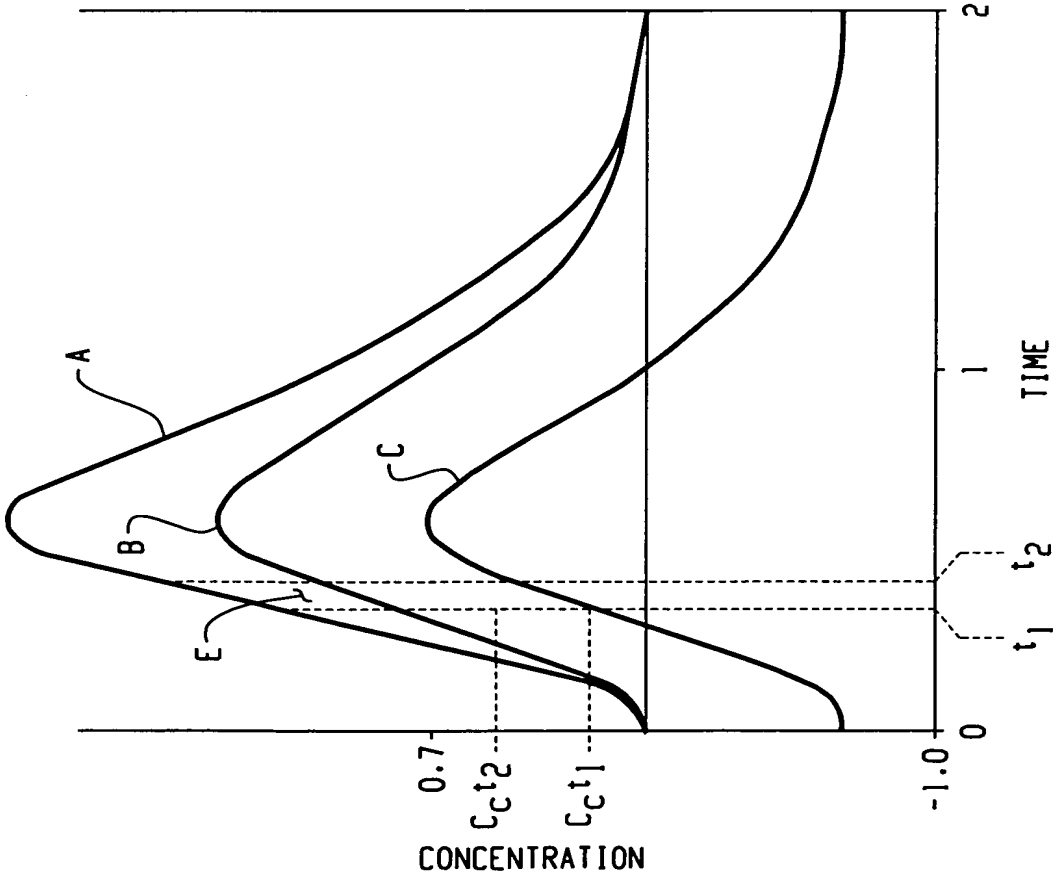
A
B
C
E
0.7
$C_c t_2$
$C_c t_1$
CONCENTRATION
-1.0
0
1
2
TIME
t_1
t_2

Fig. 5

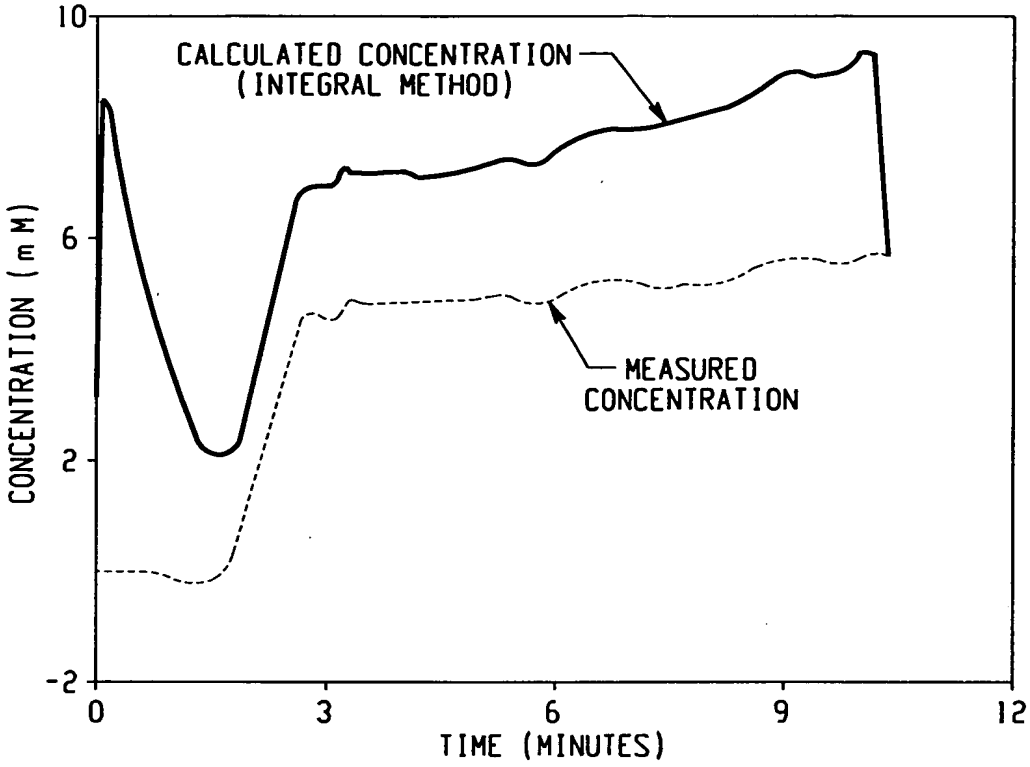
CALCULATED CONCENTRATION
(INTEGRAL METHOD)
MEASURED
CONCENTRATION
CONCENTRATION (mM)
TIME (MINUTES)
10
6
2
-2
0
3
6
9
12

Fig. 7A

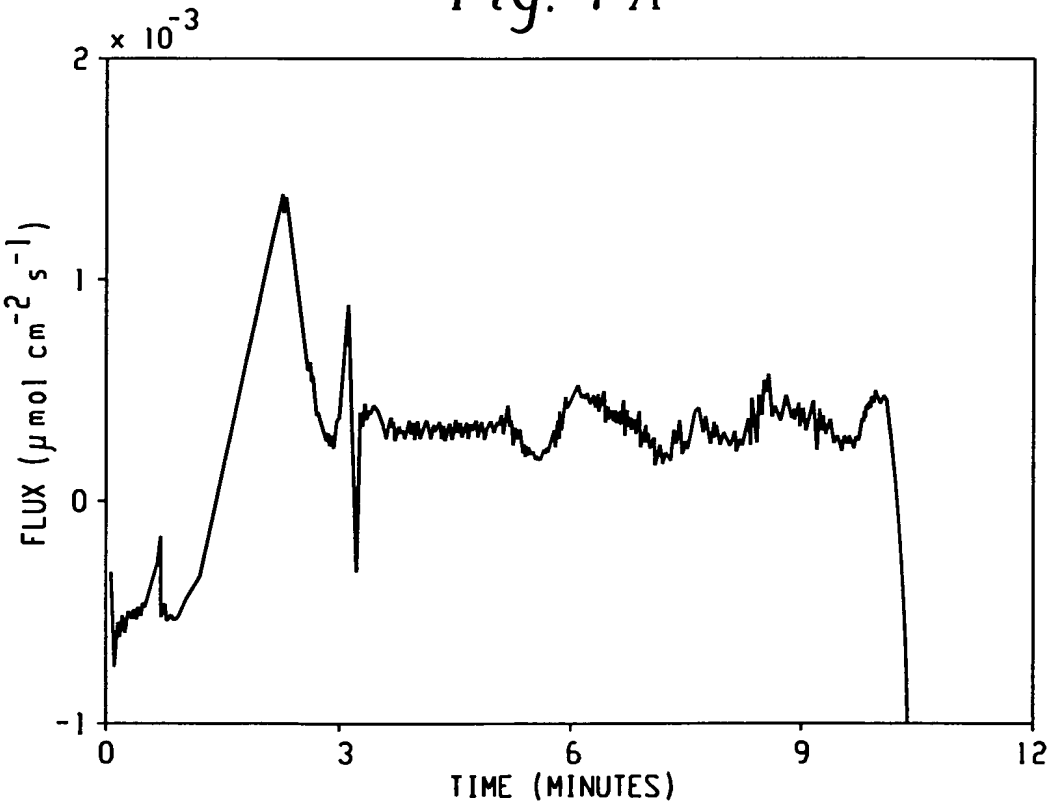
x 10^-3
FLUX (μmol cm^-2 s^-1)
TIME (MINUTES)
2
1
0
-1
0
3
6
9
12

Fig. 7B

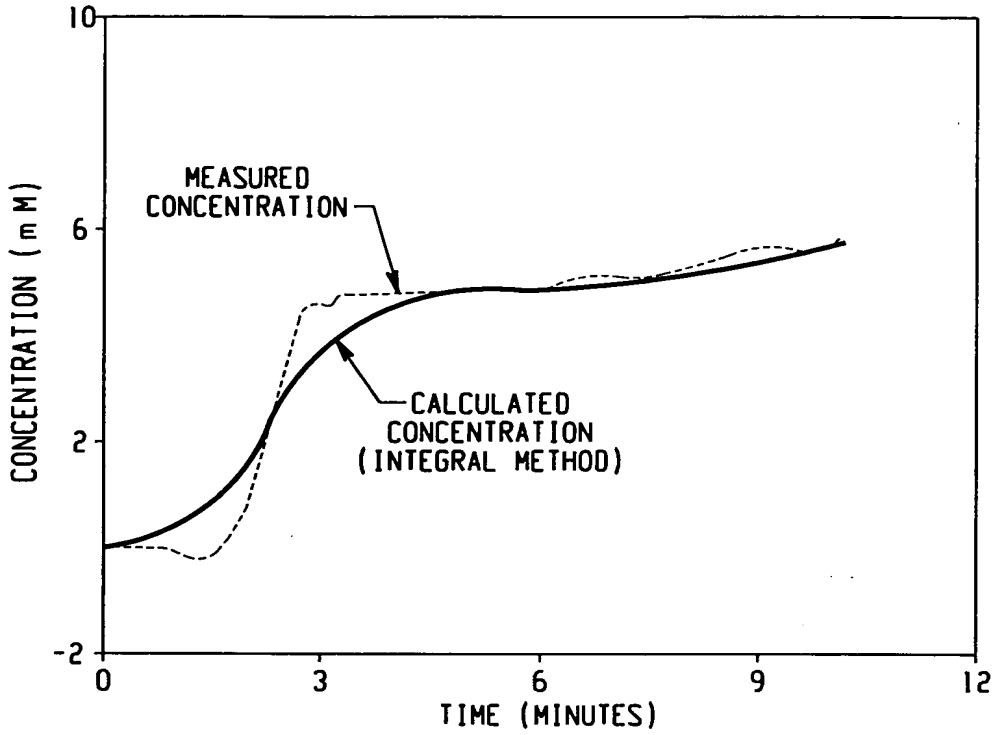
10
6
2
-2
0
3
6
9
12
CONCENTRATION (mM)
TIME (MINUTES)
MEASURED CONCENTRATION
CALCULATED CONCENTRATION (INTEGRAL METHOD)

Fig. 8A

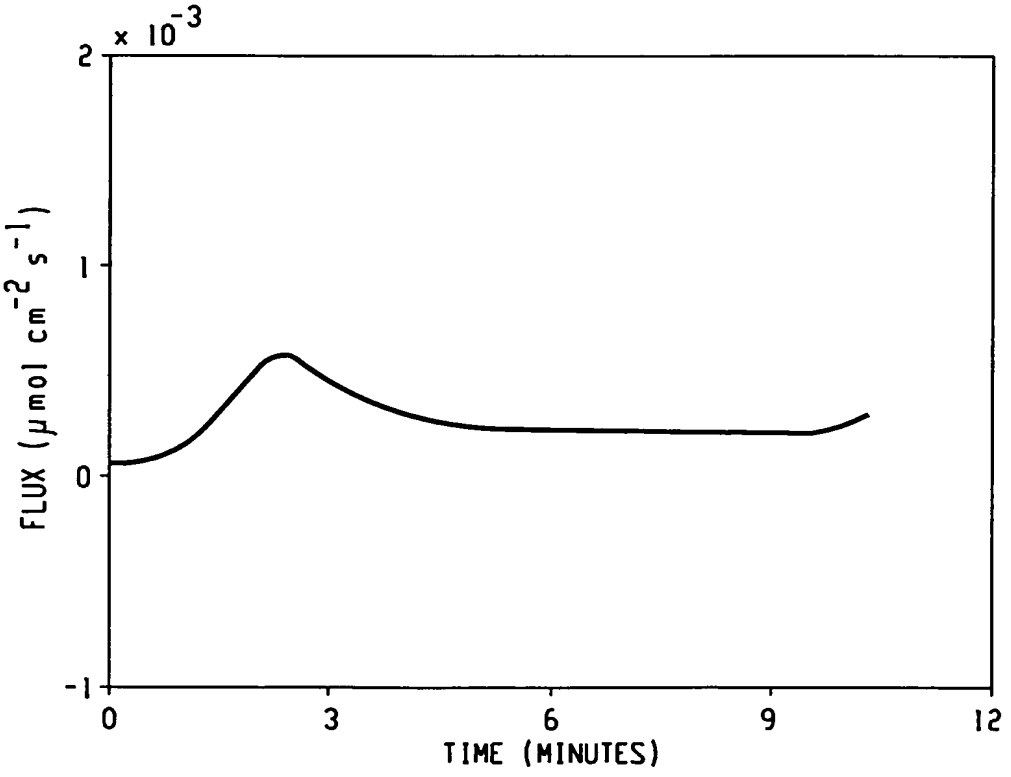
x 10^-3
2
1
0
-1
0
3
6
9
12
FLUX (μmol cm^-2 s^-1)
TIME (MINUTES)

Fig. 8B

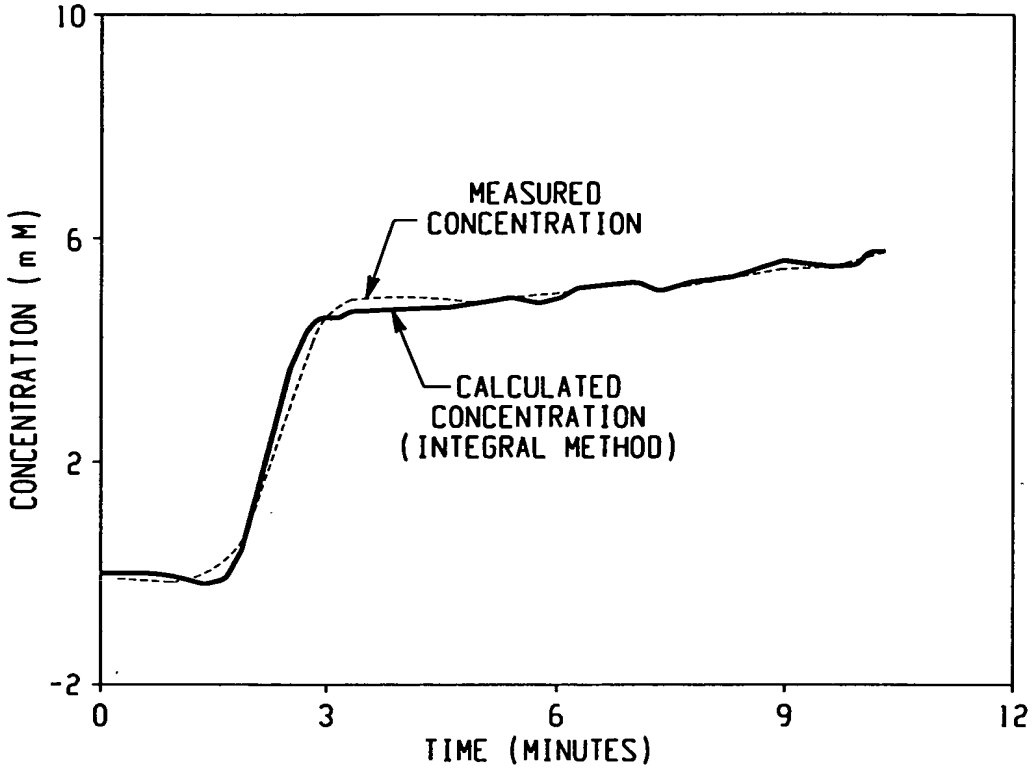
10
6
2
-2
CONCENTRATION (mM)
MEASURED
CONCENTRATION
CALCULATED
CONCENTRATION
(INTEGRAL METHOD)
0
3
6
9
12
TIME (MINUTES)

Fig. 9A

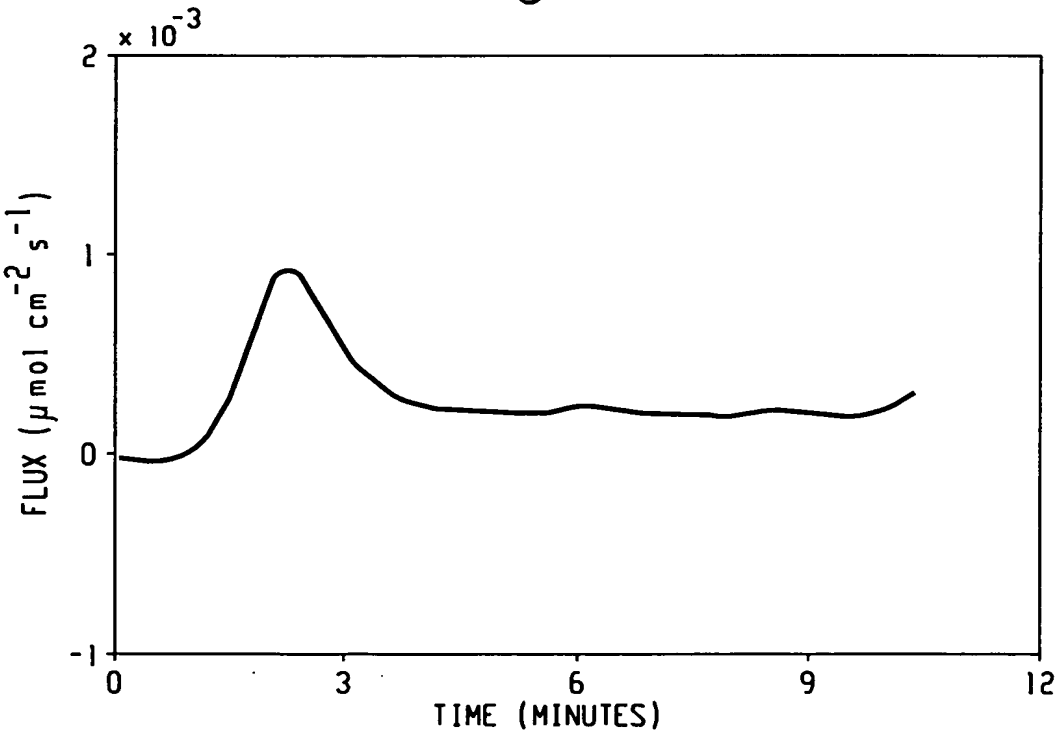
x 10^-3
2
1
0
-1
FLUX (μmol cm^-2 s^-1)
0
3
6
9
12
TIME (MINUTES)

Fig. 9B

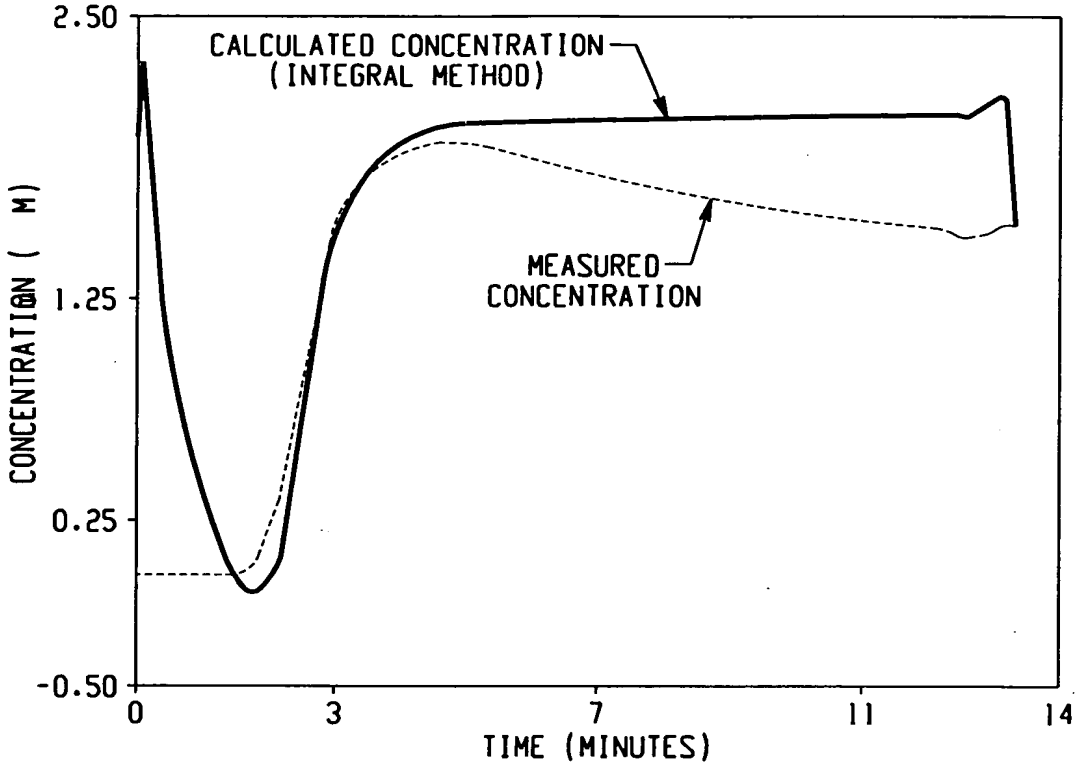

Fig. 10A

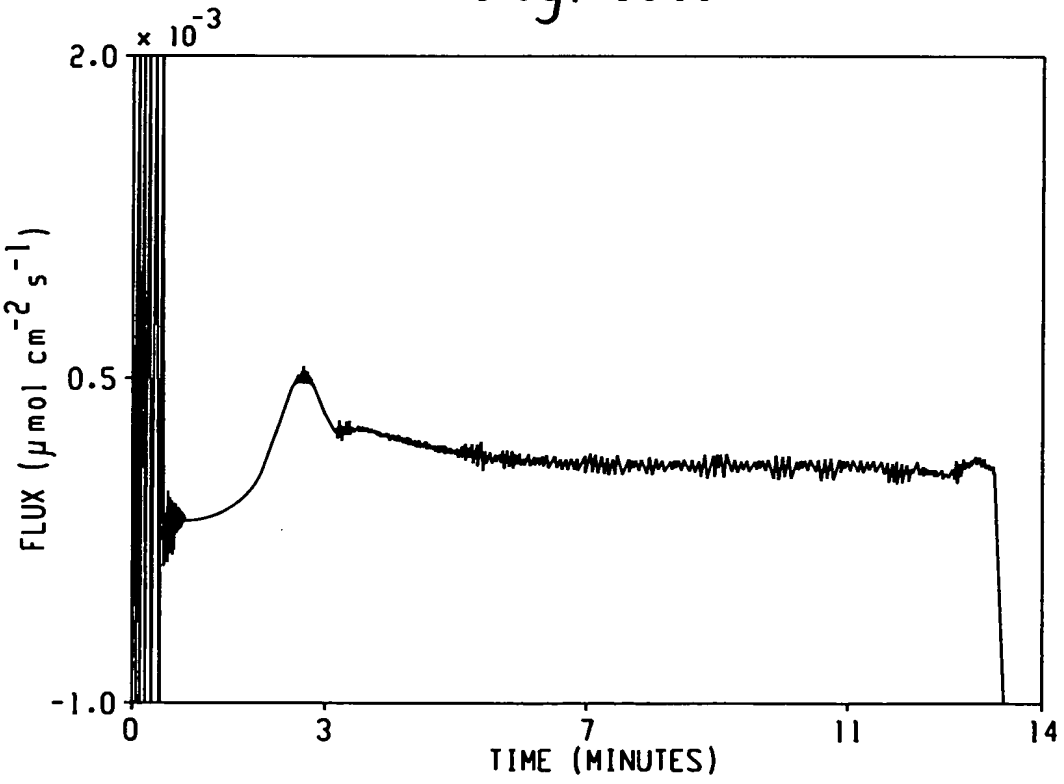

Fig. 10B

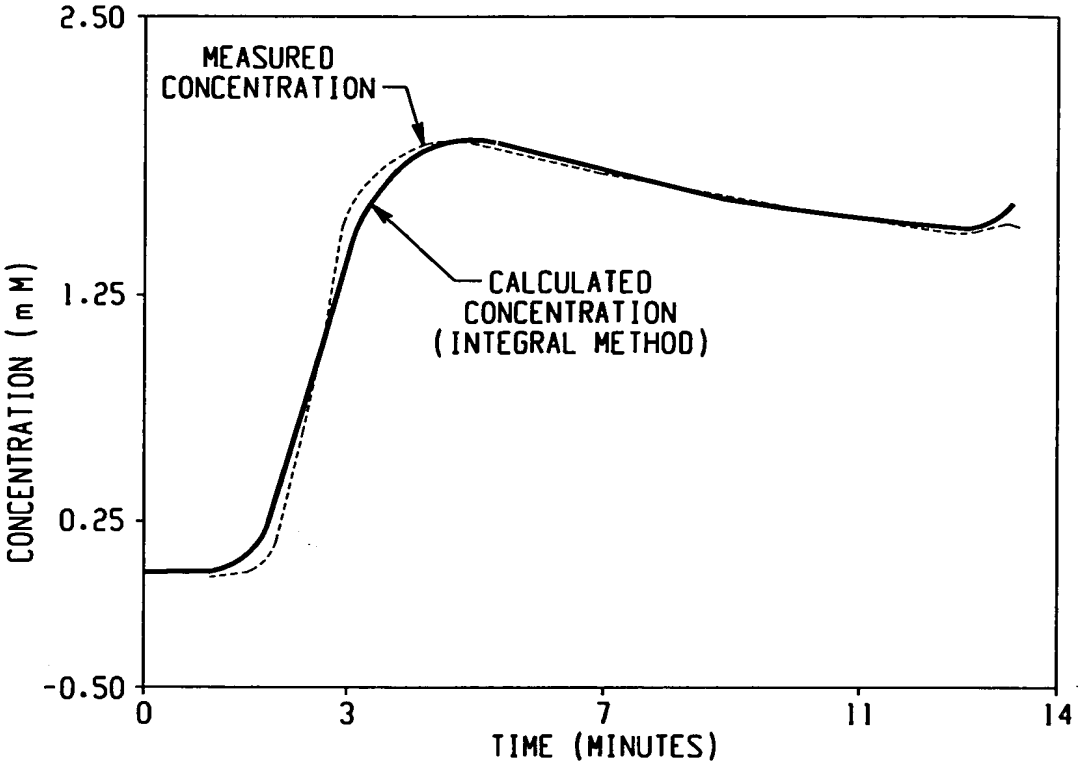

Fig. 11A

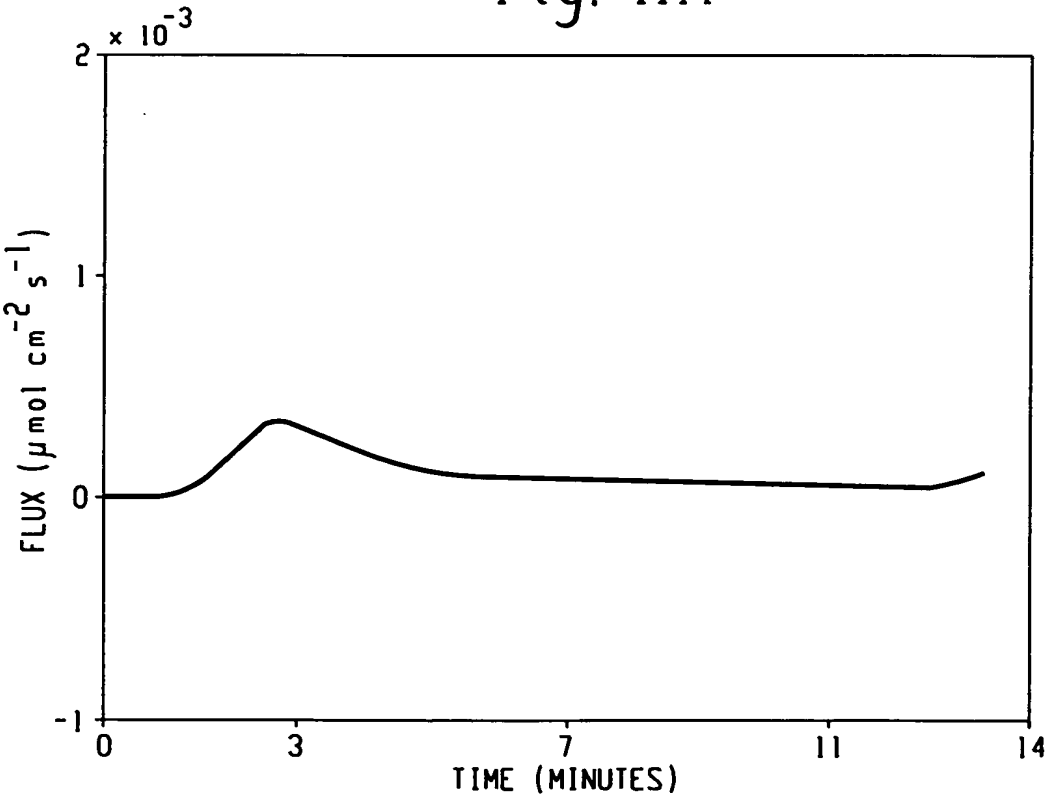

Fig. 11B

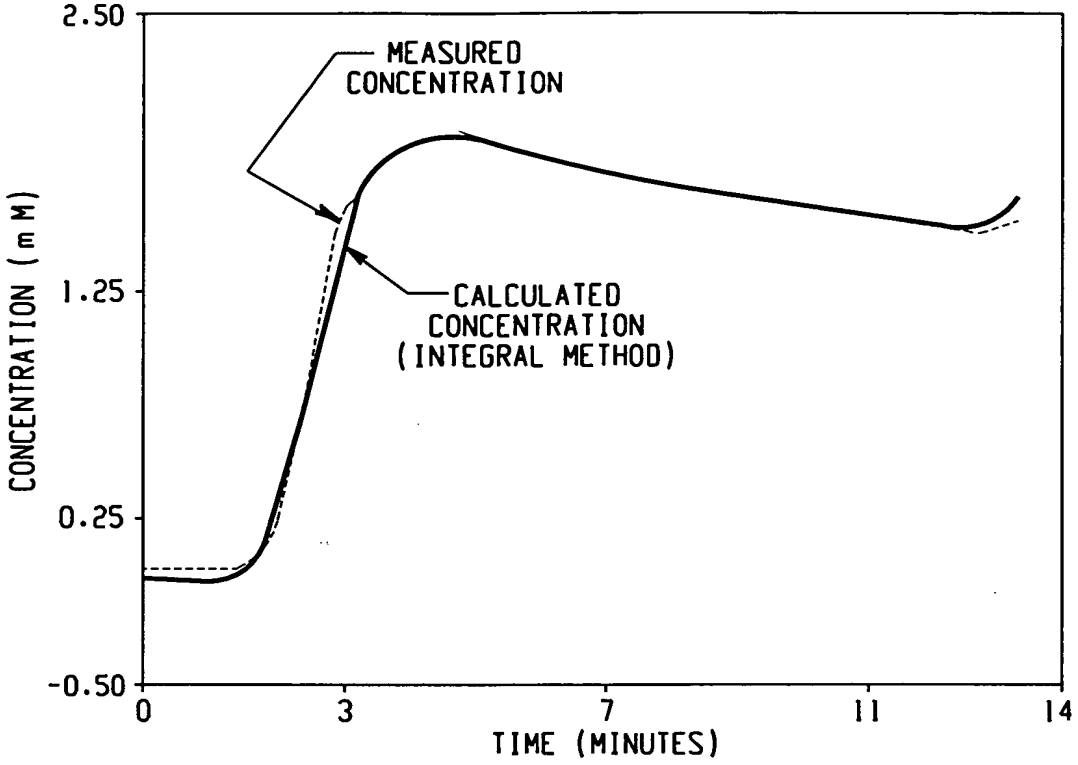

Fig. 12A

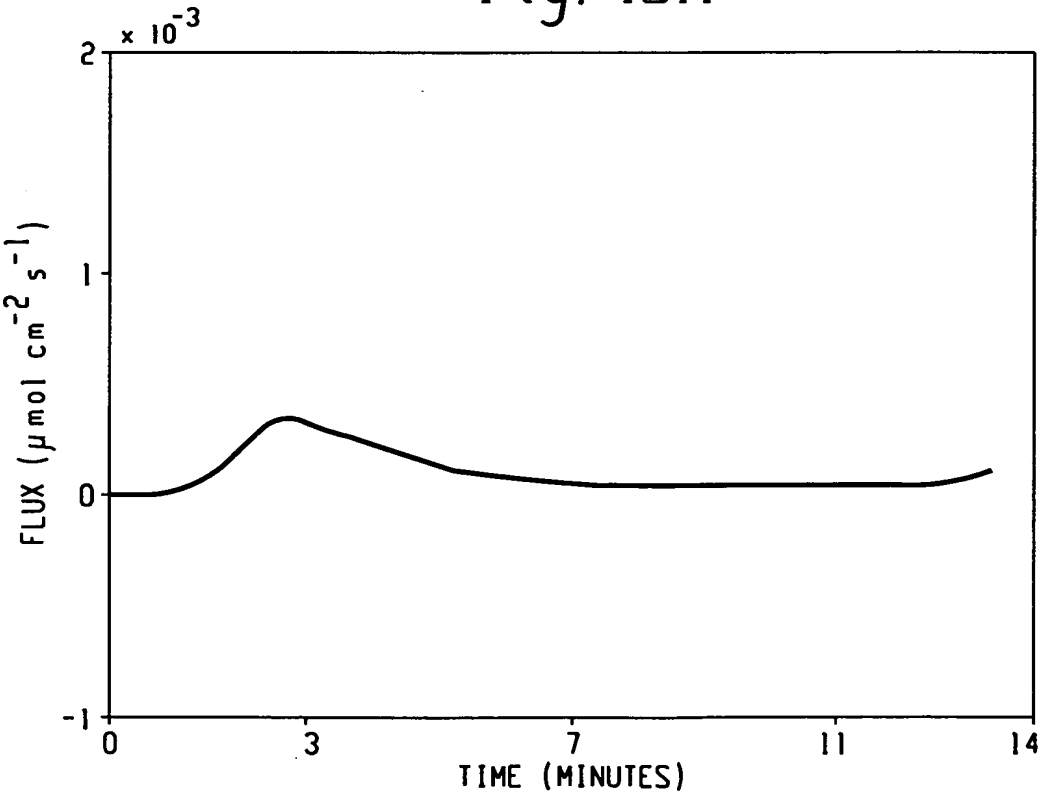

Fig. 12A

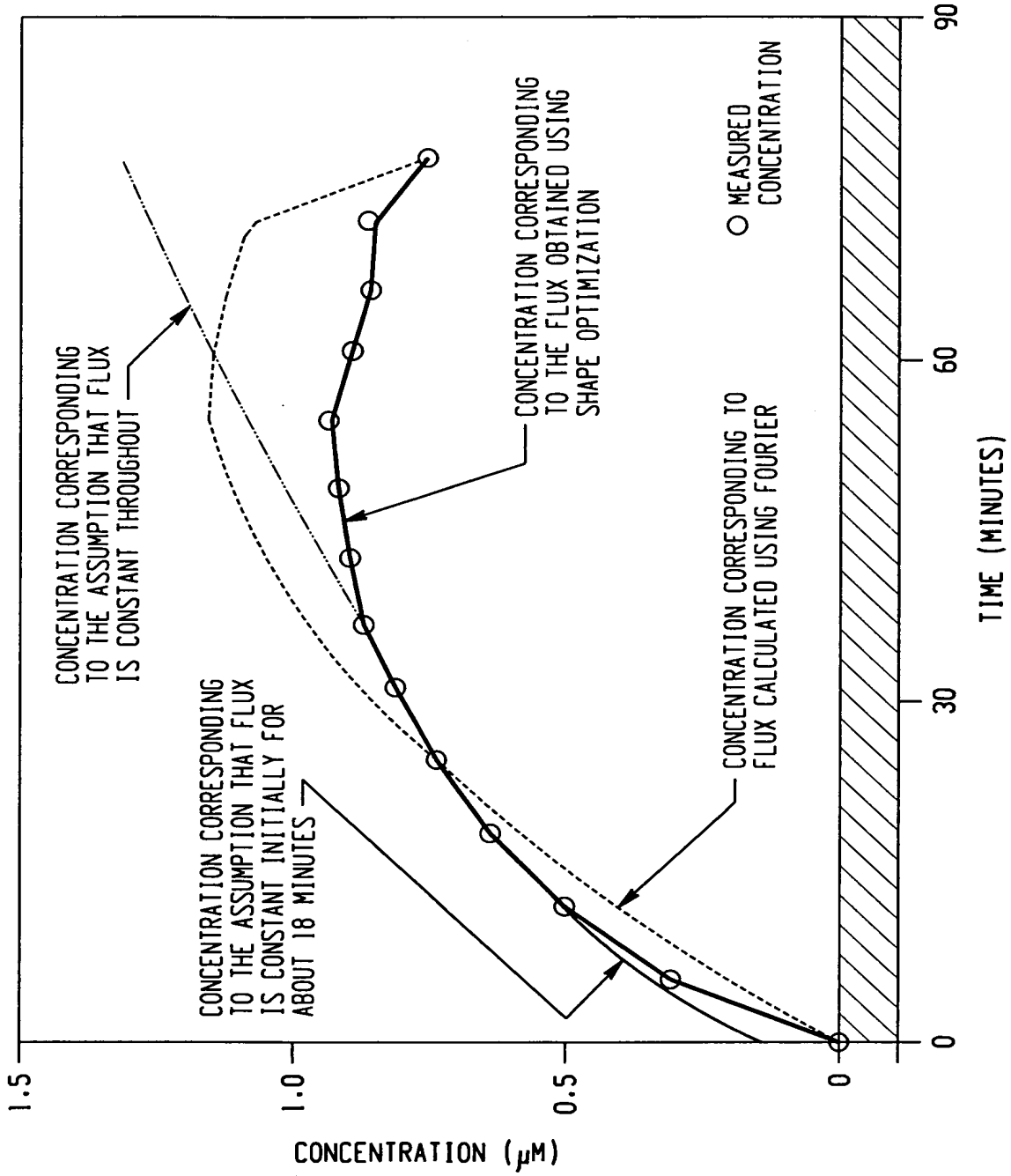
CONCENTRATION CORRESPONDING TO THE ASSUMPTION THAT FLUX IS CONSTANT THROUGHOUT
CONCENTRATION CORRESPONDING TO THE ASSUMPTION THAT FLUX IS CONSTANT INITIALLY FOR ABOUT 18 MINUTES
CONCENTRATION CORRESPONDING TO THE FLUX OBTAINED USING SHAPE OPTIMIZATION
CONCENTRATION CORRESPONDING TO FLUX CALCULATED USING FOURIER
MEASURED CONCENTRATION
CONCENTRATION (μM)
1.5
1.0
0.5
0
0
30
60
90
TIME (MINUTES)

Fig. 13A

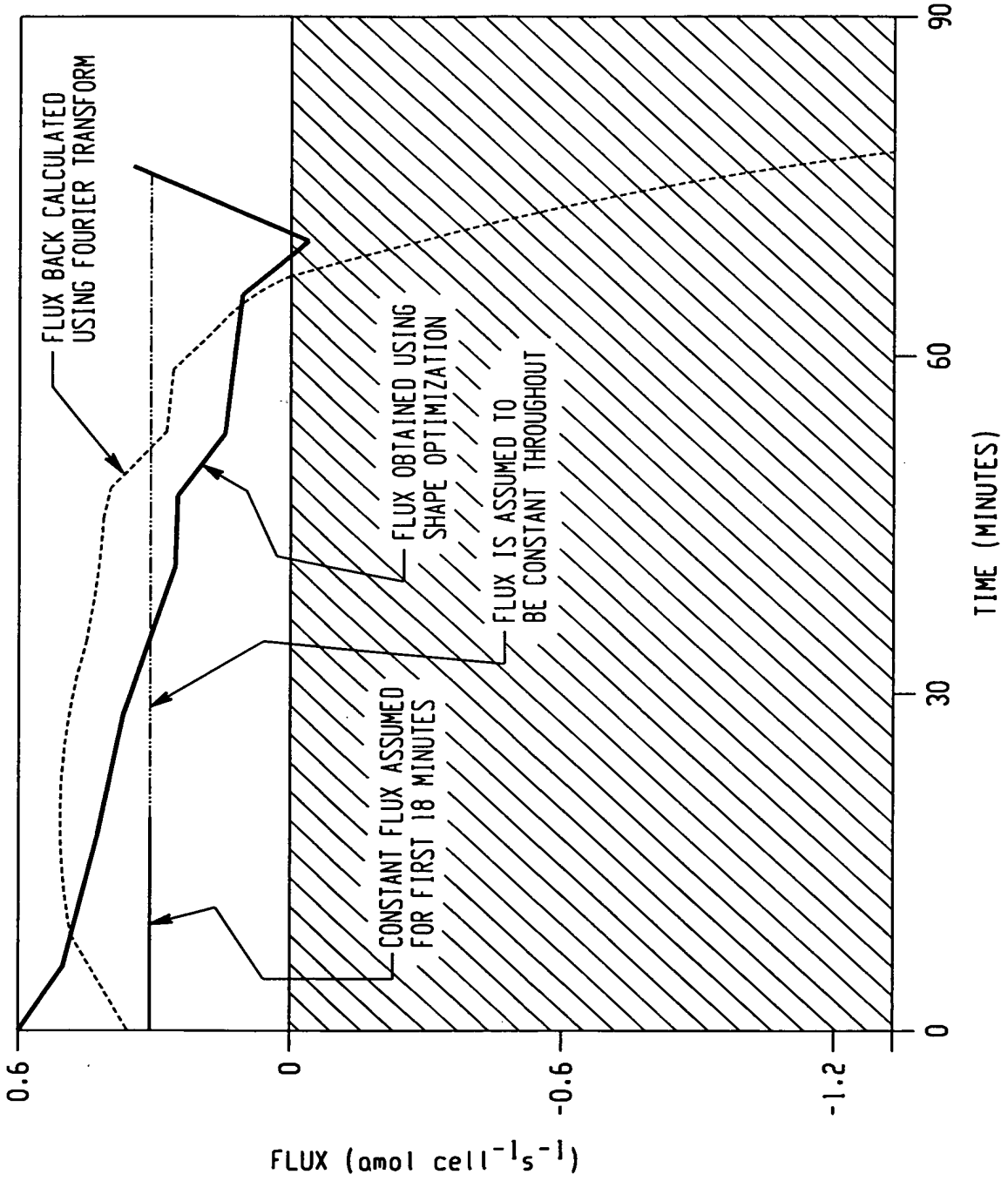
FLUX BACK CALCULATED USING FOURIER TRANSFORM
FLUX OBTAINED USING SHAPE OPTIMIZATION
FLUX IS ASSUMED TO BE CONSTANT THROUGHOUT
CONSTANT FLUX ASSUMED FOR FIRST 18 MINUTES
0.6
0
-0.6
-1.2
FLUX (amol cell^{-1}s^{-1})
0
30
60
90
TIME (MINUTES)

Fig. 13B

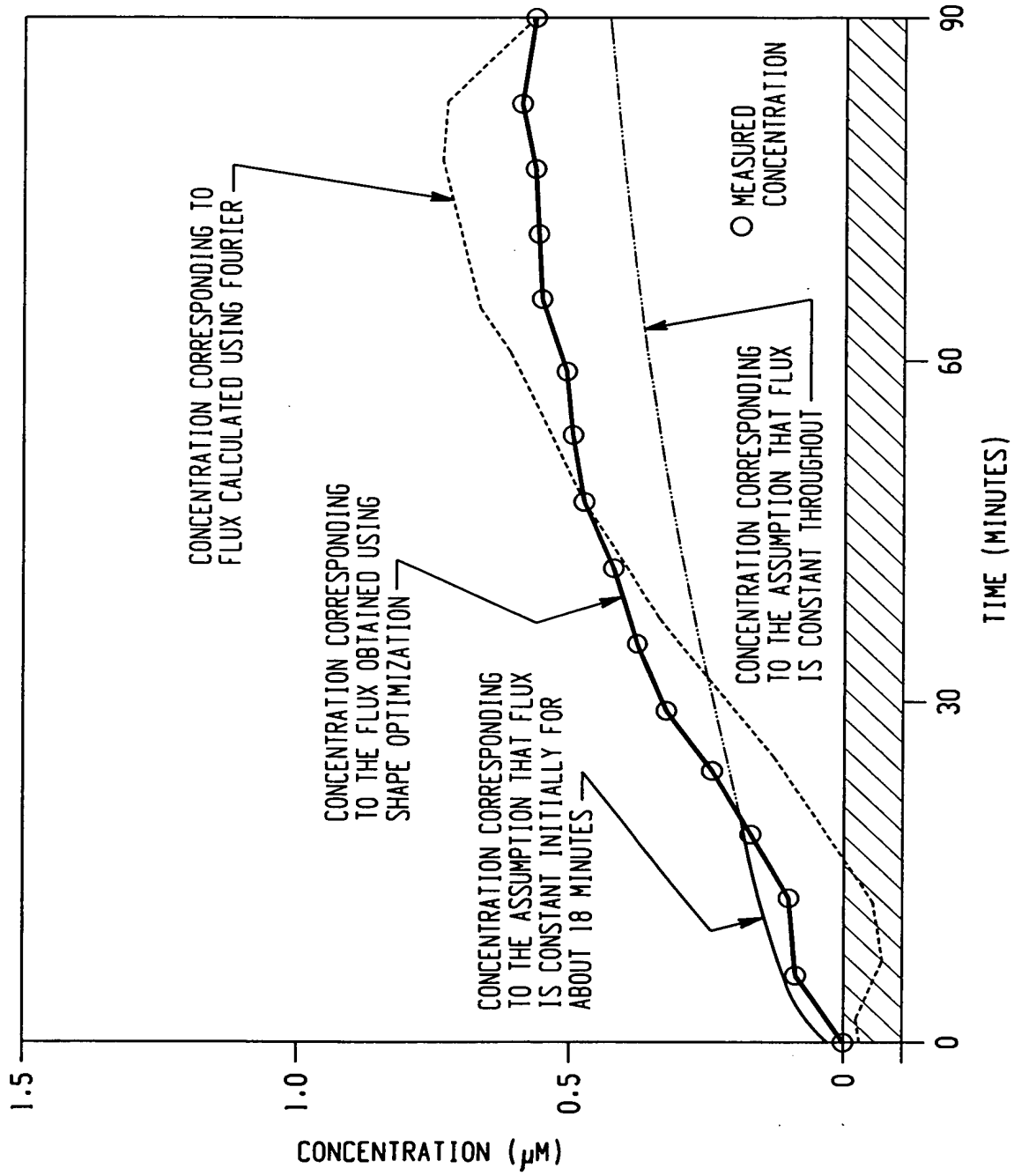
CONCENTRATION CORRESPONDING TO FLUX CALCULATED USING FOURIER
CONCENTRATION CORRESPONDING TO THE FLUX OBTAINED USING SHAPE OPTIMIZATION
CONCENTRATION CORRESPONDING TO THE ASSUMPTION THAT FLUX IS CONSTANT INITIALLY FOR ABOUT 18 MINUTES
CONCENTRATION CORRESPONDING TO THE ASSUMPTION THAT FLUX IS CONSTANT THROUGHOUT
O MEASURED CONCENTRATION
CONCENTRATION (μM)
1.5
1.0
0.5
0
0
30
60
90
TIME (MINUTES)

Fig. 13C

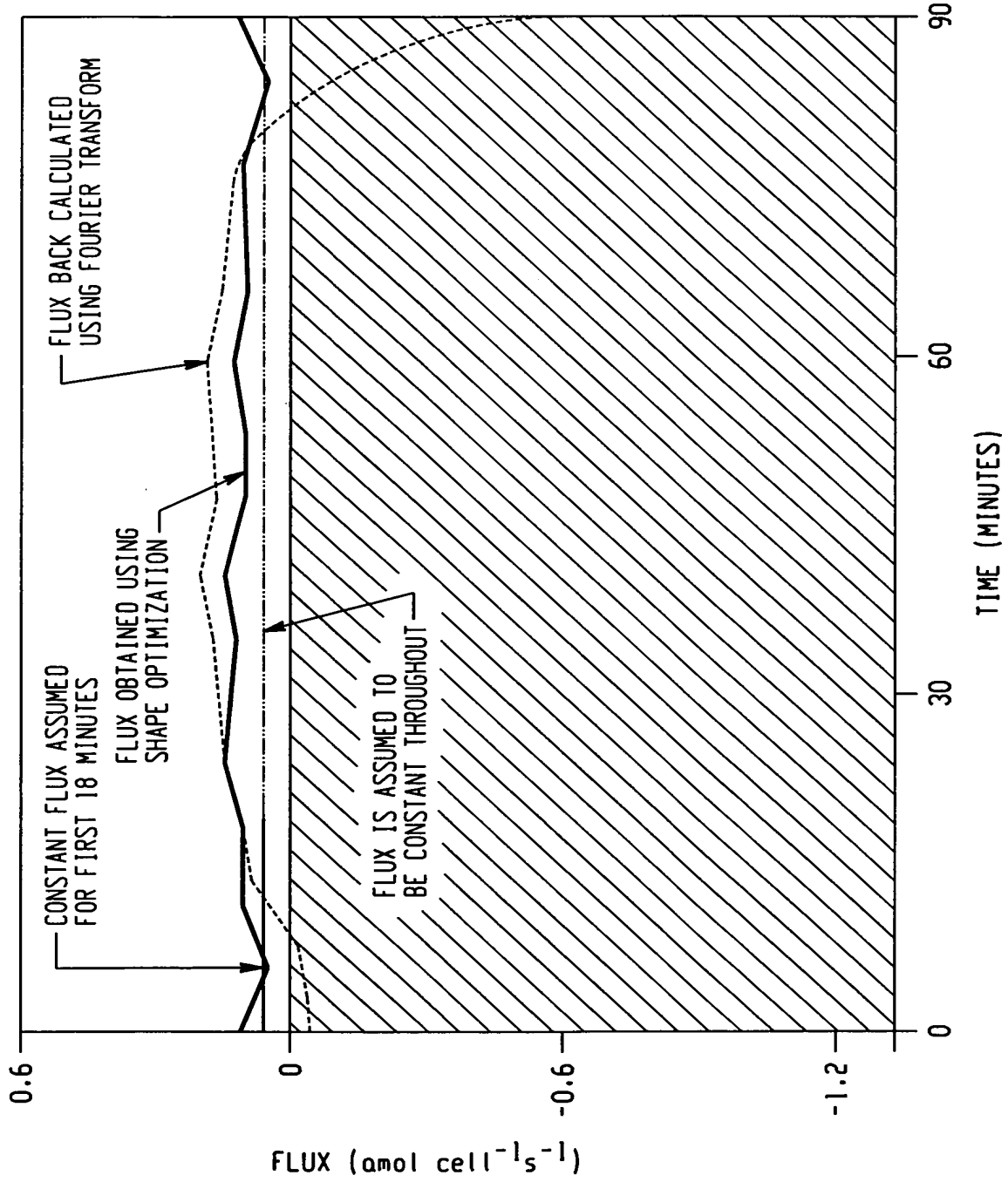
FLUX BACK CALCULATED
USING FOURIER TRANSFORM
FLUX OBTAINED USING
SHAPE OPTIMIZATION
CONSTANT FLUX ASSUMED
FOR FIRST 18 MINUTES
FLUX IS ASSUMED TO
BE CONSTANT THROUGHOUT
0.6
0
-0.6
-1.2
FLUX (amol cell^{-1}s^{-1})
0
30
60
90
TIME (MINUTES)

Fig. 13D